



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

June 9, 2016

Mr. George Lippard III  
Vice President - Nuclear Operations  
South Carolina Electric & Gas Company  
Virgil C. Summer Nuclear Station  
P.O. Box 88 (Mail Code 830)  
Jenkinsville, SC 29065

**SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION - NOTIFICATION OF RADIATION  
PROTECTION BASELINE INSPECTION AND REQUEST FOR INFORMATION**

Dear Mr. Lippard:

During the period of July 18 – 22, 2016, the U.S. Nuclear Regulatory Commission (NRC) will conduct a baseline radiation safety inspection at the V.C. Summer Nuclear Station. The inspection will evaluate activities in the Occupational and Public Radiation Safety cornerstones, using NRC Inspection Procedures 71124.01, 71124.06, 71124.07, 71124.08, Radiation Safety Sections 71151 and portions of Temporary Instruction 2800/041.

Experience has shown that this inspection is resource-intensive for both the NRC inspectors and your staff. In order to minimize the impact to your onsite resources and to ensure a productive inspection, we have enclosed a request for documents needed for this activity. It is important that all of these documents are up-to-date, and complete, thereby minimizing the number of additional documents requested during the preparation, and/or the onsite portions of the inspection. The inspector has requested that the subject informational material be provided in CD format on or before July 8, 2016.

We have discussed the schedule for these inspection activities with your staff, and understand that our regulatory contact for this inspection will be Susan Reese of your organization. If there are any questions about this inspection or the material requested, please contact the lead inspector, Carmen Dykes at 404-997-4401, or the Plant Support Branch 1 Chief, Brian Bonser at 404-997-4653.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, under control number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement, unless the requesting document displays a currently valid Office of Management and Budget control number.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public inspections, exemptions, requests for withholding," of the NRC's "Agency Rules of Practice and Procedure", a copy of this letter, and its Enclosure, will be available electronically for public inspection in the NRC Public Document Room, or from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS); accessible from the NRC Web site at <http://www.nrc.gov/reading-rm.html> (the Public Electronic Reading Room).

Sincerely,

***/RA: Adam D. Nielsen for/***

Brian R. Bonser, Chief  
Plant Support Branch 1  
Division of Reactor Safety

Docket No. 50-395  
License No. NPF-12

Enclosure  
Pre-Inspection Document Request

cc: Distribution via Listserv

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Sincerely,

**/RA: Adam D. Nielsen for/**

Brian R. Bonser, Chief  
 Plant Support Branch 1  
 Division of Reactor Safety

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 Inspection Document Request

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SIGNATURE	<b>CDM4 VIA EMAIL</b>	<b>AND FOR BRB1</b>				
NAME	C. Dykes	B. Bonser				
DATE	06/8 /2016	06/ 9/2016				
E-MAIL COPY	YES NO	YES NO				

**INSPECTION DOCUMENT REQUEST  
Public Radiation Safety Cornerstone**

Licensee: V.C. Summer Nuclear Station

Docket Number(s): 05000395

Inspection Dates: July 18 – 22, 2016

Procedures:

71124.06	Radiological Hazards Assessment and Exposure Controls
71124.06	Radioactive Gaseous and Liquid Effluent Treatment
71124.07	Radiological Environmental Monitoring Program
71124.08	Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation
71151	Performance Indicator Verification
TI 2800/041	Title 10 CFR Part 37 Materials Security Review - At Facilities with a Title 10 CFR Part 73 Physical Protection Program

**Note:** Unless specified otherwise, the current version of these documents is expected. Electronic media is preferred if readily available (The preferred file format is MSWord, or searchable “.pdf” files on CDROM. Please provide three copies of each electronic media device submitted.). *Note that the inspectors cannot accept data provided on USB or “flash” drives due to NRC IT security policies.* To the extent possible, please organize the information in the order shown below. Experience has shown that a poorly organized CD leads to a less efficient inspection and places additional burden on licensee staff. If there are questions regarding the documents requested, please do not hesitate to contact the lead inspector. An index to the CD contents is also helpful. For those items requesting a list of documents/areas, the inspector will select documents/areas from the list for onsite review. Thank you in advance for all of your effort in putting together this material.

If you have any questions, please call Carmen Dykes.

Inspector Contact Information

Carmen Dykes  
404-997-4401  
carmen.dykes@nrc.gov

Mailing Address

US Nuclear Regulatory Commission  
Region II  
ATTN: Carmen Dykes  
245 Peachtree Center Ave., NE  
Atlanta, GA 30303

**Assistance Requested During Onsite Inspection**

- An inspector will need to accompany the weekly environmental sample collection run.
- An inspector will need to tour the Meteorological Tower and will need to be able to discuss reliability and data recovery issues.
- An inspector will need to observe effluent sample collection and walk-down and discuss effluent monitors and processing.
- An inspector will need to walk-down and discuss liquid and solid waste processing systems, including out of service and equipment abandoned in place or no longer used.
- An inspector will need to observe any shipments or receipts of radioactive material.

Enclosure

## **A. General Information Needed**

1. Telephone numbers of contacts for the identified inspection areas.
2. Plant, Chemistry, and Radiation Protection organizational charts, including personnel involved in effluent sampling and reporting, Radiological Environmental Monitoring Program (REMP) sampling and reporting, and solid radwaste processing and transportation of radwaste/radioactive materials (RAM).
3. List of radiation protection procedures to also include effluent sampling and reporting procedures and REMP sampling and reporting procedures, including title and number.
4. Current Part 61 Analysis Results for Dry Active Waste (DAW).
5. Procedures for issuing and assessing issues for risk significance and followup actions (i.e., Corrective Action Program procedures).
6. Procedure(s) for identifying, notification, tracking, and correcting performance indicators (PI) occurrences.
7. Current version/revision of the Offsite Dose Calculation Manual (ODCM).
8. Annual Radiological Environmental Operating Report (AREOR) for Calendar Year (CY) , CY2014, and CY 2015.
9. Annual Radiological Effluent Release Report (ARERR) documents for CY2014, and CY 2015.
10. List of all PIs and copies of associated corrective action reports for Occupational Exposure Control Effectiveness and Radiological Effluent Technical Specifications (RETS)/ODCM Radiological Effluent Occurrences in the past year.
11. Audits and self-assessments performed since July 2015 that encompass the areas of (1) effluent monitoring program and implementation; (2) REMP monitoring program and implementation; (3) liquid and solid radwaste processing; and (4) transportation of RAM/radwaste.

## **B. 71124.01 - Radiological Hazard Assessment and Exposure Controls**

1. List of active Radiation Work Permits (RWPs), including outage RWPs, with their administrative limits, electronic dosimeter dose rate limit, and dose limit.
2. List of locations, or plant maps indicating the location, of all LHRA and VHRA. Include areas with the potential to become a LHRA during routine operations or outages.
3. Most recent survey of all Locked HRAs and VHRA (as applicable).
4. Independent spent fuel storage installation information to include surveys, exposure data, as low as reasonably achievable (ALARA) planning and reviews conducted for the last two moves. Also, the last two routine surveys of the facility and any Thermoluminescent Dosimeter area monitoring results of the facility.
5. Procedures related to HP controls (e.g. Posting, labeling, surveys, RWPs, contamination control, HRA/LHRA/VHRA control, key control, control of divers, special controls during fuel offload, hot spots, etc.).
6. Procedures related to release of personnel and materials (e.g. release surveys, decontamination, guidance for alarm follow up, etc.).
7. List of Nationally Tracked Sources, change of owner ship and copies of any National Source Tracking System transaction documentation (e.g., annual reconciliation).
8. Most recent sealed source inventory record.
9. List of all non-fuel items stored in spent fuel pool.
10. All self-assessments and audits covering HP controls since July 1, 2015.
11. List of Corrective Action non-conformance documents (e.g. NCRs, CRs, etc.) related to HP controls where the cause was listed as human performance (radworker error) or human performance (HP technician error) generated since July 1, 2015. *This should be*

*a list of corrective action documents containing a CR number and brief description, not full CRs.*

12. All CRs related to Nationally Tracked Sources since July 1, 2015.

**C. 71124.06 - Radioactive Gaseous and Liquid Effluent Treatment**

1. Provide Procedures/Guidance Documents for:
  - a. Collection, analysis, release and dose evaluations for gaseous and/or liquid effluents, including guidance for both batch and continuous modes.
  - b. Determination of set-points for main plant gaseous and liquid effluent discharge pathways.
  - c. Groundwater monitoring program.
2. Provide a list of any significant changes to the ODCM since July 2015.
3. Provide a list of significant changes to the radioactive effluent processing systems since July 2015.
4. Provide a list of any non-radioactive systems that have become contaminated since July 2015.
5. Provide a list of any unmonitored, unplanned, or otherwise abnormal gaseous or liquid releases identified since July 2015.
6. Provide last two gaseous effluent permits and last two liquid effluent permits.
7. Provide system health reports for radiological effluent/process monitoring systems since July 2015.
8. Provide a list of the main liquid and gaseous effluent pathway process monitors listed as out-of-service (OOS) since July 2015. *[Note: Do not include monitors listed as OOS for less than 24 hours.]*
9. List of significant changes to the effluent monitoring program since July 2015, as documented within the ODCM.
10. Provide groundwater monitoring results since July 2015.
11. Inter-laboratory comparison program results (onsite count room) since July 2015.
12. Results of last two filtration system (HEPA/Charcoal) surveillances for gaseous effluent pathways.
13. Copies of all audits, self-assessments, and/or reviews of liquid and gaseous effluent monitoring program activities since July 2015. The data should include any reviews conducted of vendor activities and their facilities.
14. List of condition reports (CRs) generated since July 2015, because of gaseous and liquid effluent processing, and/or ODCM related activities. This should be a list of corrective action documents containing a CR number and brief description, not full CRs. *[Note: Only titles/summary statement should be provided for use by the inspectors to select a sample of issues for in-depth review.]*

**D. 71124.07 - Radiological Environmental Monitoring Program**

1. Provide Procedures/Guidance Documents for:
  - a. Collection and analysis of environmental samples.
  - b. Calibration and maintenance of REMP air and/or water samplers.
  - c. Calibration of meteorological monitoring instrument loop (wind speed & direction, air temperature sensors currently in use).
  - d. Monthly/quarterly meteorological instrumentation surveillance requirements (control room and local tower activities).

2. Records for the last two calibrations of the following:
  - a. REMP air and water sampling equipment (as applicable)
  - b. Meteorological monitoring instruments (wind speed & direction, air temperature).
3. Detailed inter-laboratory comparison program results (environmental lab) since July 2015.
4. Copies of all audits, self-assessments, and/or reviews of REMP activities since July 2015. The data should include any reviews conducted of vendor activities and their facilities (e.g., environmental lab).
5. List of systems, structures, or components (SSCs), identified as credible mechanism(s) having the potential for release of licensed material to the groundwater environs.
6. List of significant REMP changes (sample locations, sample frequency, type of samples, etc.) documented within the ODCM since July 2015.
7. List of sampling stations that were OOS and dates for more than 24 hours since July 2015.
8. Provide a copy of 10 CFR 50.75(g) files.
9. List of CRs generated as a result of REMP activities since July 2015. *[Note: Only titles/summary statement should be provided for use by the inspectors to select a sample of issues for in-depth review.]*

**E. 71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation**

1. Provide Procedures/Guidance Documents describing licensee compliance with 10 CFR Parts 20, 61, and 71, and 49 CFR Parts 170-189. Procedures/manuals should include:
  - a. Solid and liquid radwaste processing procedures.
  - b. Procedure(s) for transferring radioactive waste resin and sludge discharges into shipping/disposal containers.
  - c. Waste stream mixing and/or sampling procedures, including:
    - i. waste concentration averaging
    - ii. use of scaling factors and calculations used to account for difficult-to-measure radionuclides
    - iii. ensuring waste stream composition data accounts for changing operational parameters.
  - d. Shipping/transportation procedures.
  - e. Cask loading and closure procedures (licensee and vendor) applicable to last three cask transports.
  - f. List of RAM storage areas, including satellite radiological controlled areas (RCAs).
  - g. Monitoring impact of long-term storage (e.g., buildup of gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, rerelease of free-flowing water).
  - h. Process Control Program (PCP).
2. Most recent radio-chemical sample analysis results (i.e., "10 CFR Part 61" analysis) for each of the radioactive waste streams (e.g., DAW, ion exchange resins, mechanical filters, and sludges and activated materials).
3. Liquid and solid radwaste system diagrams and detailed system descriptions (e.g., information that might be contained in curricula for training new system engineers)

4. List and documentation of any changes made to the radioactive waste processing systems (liquid and solid), and/or the PCP since July 2015, and associated
  - a. 10 CFR Part 50.59 documentation, as appropriate.
    - i. Copies of applicable transport cask Certificate of Compliance for the last three transport cask shipments.
    - ii. Training and qualification records for personnel responsible for radioactive waste processing and RAM material shipment preparation activities.
    - iii. Log of RAM shipments (LSA I, II, III; SCO I, II, Type A, or Type B) since September 2012. (The inspectors will select three to five packages to review in detail.)
5. List of corrective action reports generated since July 2015, involving radioactive waste and RAM/waste transportation.
6. Available for onsite review during the inspection:
  - a. Site drawing(s) showing the location of all stored RAM and all stored radioactive waste.
  - b. Plant drawings sufficient to permit the inspector to walkdown the liquid and solid radioactive waste processing systems, to verify current system configuration/operation agree with the descriptions contained in the Updated Final Safety Analysis Report (UFSAR) and in the PCP.
  - c. Documentation describing the status of any radioactive waste process equipment that is not operational and/or is abandoned in place.
  - d. Information concerning the site's waste disposal volume and waste reduction program.
  - e. Training curriculum and primary lesson plans for qualifying persons, including vendors, for radwaste processing, packaging, and making shipments of RAM and radioactive waste as specified by 49 CFR 172.

**F. 71151 - Performance Indicator Verification**

1. Monthly PI reports since July 2015 and copies of associated CRs for any RETS/ODCM Radiological Effluent occurrences.
2. Liquid and gaseous effluent release permits which specify the monthly, quarterly, and annual curies released by isotope and associated public dose assessments since July 2015.
3. List of all corrective action documents since July 2015, using keywords such as: High Radiation Area (HRA), Locked High Radiation Area (LHRA), Very High Radiation Area (VHRA), unintended dose, unlocked door, etc.
4. List of all electronic dosimeter (ED) dose rate alarms > 1 R/hr and all ED dose alarms since July 2015.

**G. Technical Instruction 2800/041 - Title 10 CFR Part 37 Materials Security Review – At Facilities with a Title 10 CFR Part 73 Physical Protection Program (Radiation Protection portions only)**

1. All site specific and corporate procedures related to 10 CFR Part 37 compliance (storage of RAM, 10 CFR Part 37 Security Plan, etc.).\*
2. List of all known/designated locations of Category 1 and 2 material.
3. All supporting calculations for determination of whether an aggregation of RAM meets the definition of Category 1 or Category 2 (e.g., warehouse calculation).



4. Any additional radiation protection procedures that identify radiation protection interaction with security, or requirements related to 10 CFR Part 37 compliance.

*\*Please do not include Safeguards or Official Use Only information in the submittal. That information can be reviewed onsite.*

## **LIST OF ACRONYMS**

AREORs	Annual Radiological Environmental Operating Reports
ARERRs	Annual Radiological Effluent Release Reports
CRs	Condition Reports
CY	Calendar Year
DAW	Dry Active Waste
ED	Electronic Dosimeter
HRA	High Radiation Area
LHRA	Locked High Radiation Area
ODCM	Offsite Dose Calculation Manual
OOS	Out-of-Service
PCP	Performance Control Program
PI	Performance Indicator
RAM	Radioactive Material
RCAs	Radiological Controlled Areas
REMP	Radiological Environmental Monitor Programs
RETS	Radiological Effluent Technical Specifications
SSCs	Systems, Structures, or Components
UFSAR	Updated Final Safety Analysis Report
VHRA	Very High Radiation Area